

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number
WO 2005/018457 A1

(51) International Patent Classification⁷: **A61B 6/00**

(21) International Application Number:
PCT/IB2004/051432

(22) International Filing Date: 10 August 2004 (10.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03102610.7 20 August 2003 (20.08.2003) EP

(71) Applicant (for DE only): **PHILIPS INTELLECTUAL
PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).

(71) Applicant (for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE,
BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CY, CZ,

DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
SE, SG, SK, SL, SY, SZ, TJ, TM, TN, TR, TT, TZ, UA, UG,
UZ, VC, VN, YU, ZA, ZM, ZW only): **KONINKLIJKE
PHILIPS ELECTRONICS N. V.** [NL/NL]; Groenewoud-
seweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

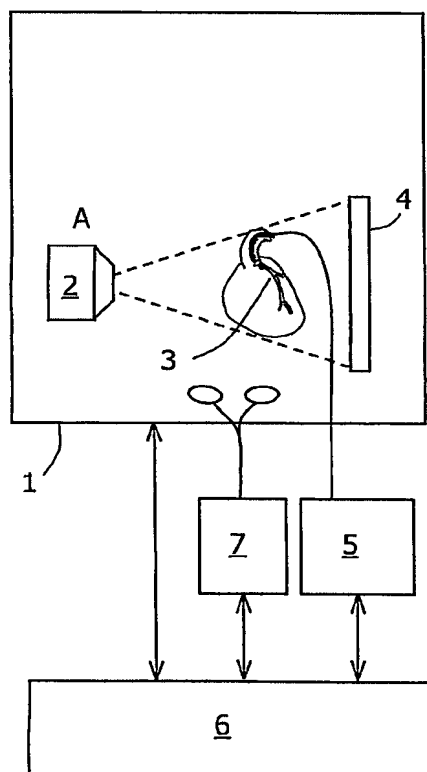
(75) Inventors/Applicants (for US only): **GRASS, Michael**
[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausstr. 2, 52066 Aachen (DE). **RASCHE,
Volker** [DE/DE]; c/o Philips Intellectual Property &
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).

(74) Agent: **MEYER, Michael**; Philips Intellectual Property &
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

[Continued on next page]

(54) Title: METHOD AND DEVICE FOR FLOW RECONSTRUCTION



(57) Abstract: The invention relates to a method and a device for the three-dimensional reconstruction of the flow conditions in a vascular system (3), in which, in a first phase after the beginning of a contrast-medium injection, X-ray projection pictures are produced from the same direction (A) at a high picture-taking rate in order to observe the inflow of the contrast medium. When the contrast medium fills the vascular system (3), a rotation of the Xray device (1) takes place during which projection pictures are produced at a lower picturetaking rate and/or at a lower radiation dose, from which pictures the three-dimensional structure of the vascular tree can be reconstructed. Optionally, at the end of the rotation, projection pictures may again be taken from a fixed direction that observe the drainage of the contrast medium from the vascular system (3).



AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.